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EXAMINER

ZHENG, EVA Y

ART UNIT	PAPER NUMBER
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2634

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DATE MAILED: 04/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/818,252

Applicant(s)

STACEY ET AL.

Examiner

Eva Yi Zheng

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-10 is/are rejected.
- 7) ☒ Claim(s) 4 and 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 8-10 are objected to because of the following informalities:
 - a) Regarding claim 8, line 2, "the acts of" should be changed to -- the step of --.
 - b) Regarding claim 9, line 1, "said act of" should be changed to -- said step of --.
 - c) Regarding claim 10, line 2, "the act of" should be changed to -- the step of --.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3 and 8-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Jones (US 6,310,909 B1).

a) Regarding claim 1, Jones discloses a system for synchronizing a public switched telephone network (PSTN) clock and a digital subscriber line (DSL) clock, comprising:

- a PSTN interface (23) coupled to transmit and receive voiceband samples;
- a data DSL transceiver (as shown in Fig. 2) coupled to modulate (block 13) and demodulate (block 30) data to and from DSL samples;

- a synchronization circuit (block 29) coupled to synchronize said voiceband samples and said DSL samples; and

- a converter circuit (block 16 and 27) coupled to convert the synchronized voiceband samples and the synchronized DSL samples between analog and digital formats.

b) Regarding claim 2, Jones discloses the converter circuit converts said voiceband samples and said DSL samples from a digital format to an analog format (block 16 in Fig. 2) for transmitting a combined voiceband and data signal.

c) Regarding claim 3, Jones discloses the converter circuit converts said voiceband samples and said DSL samples from an analog format to a digital format (block 27 in Fig. 2) for receiving a combined voiceband and data signal.

d) Regarding claim 8, Jones discloses a method of synchronizing a public switched telephone network (PSTN) clock and a digital subscriber line (DSL) clock, comprising the acts of:

- upsampling (block 17 in Fig. 2) a voiceband signal, to increase said voiceband signal to a frequency comparable with a data signal; and

- sample slipping one of said voiceband signal and said data signal, to

synchronize said voiceband signal and said data signal (Col 6, L12-17).

e) Regarding claim 9, Jones discloses the act of sample slipping synchronizes said voiceband signal with said data signal (Col 6, L12-17).

4. Claims 1-3 and 8-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Long et al. (5,991,311) (AAPA).

a) Regarding claim 1, Long et al. disclose a system for synchronizing a public switched telephone network (PSTN) clock and a digital subscriber line (DSL) clock, comprising:

a PSTN interface (tel line) coupled to transmit and receive voiceband samples;

a data DSL transceiver (as shown in Fig. 11) coupled to modulate and demodulate data to and from DSL samples;

a synchronization circuit (block 98) coupled to synchronize said voiceband samples and said DSL samples; and

a converter circuit (block 44) coupled to convert the synchronized voiceband samples and the synchronized DSL samples between analog and digital formats.

b) Regarding claim 2, Long et al. disclose the converter circuit converts said voiceband samples and said DSL samples from a digital format to an analog format (block 44 in Fig. 11) for transmitting a combined voiceband and data signal.

c) Regarding claim 3, Long et al. disclose the converter circuit converts said

voiceband samples and said DSL samples from an analog format to a digital format (block 44 in Fig. 11) for receiving a combined voiceband and data signal.

d) Regarding claim 8, Long et al. disclose a method of synchronizing a public switched telephone network (PSTN) clock and a digital subscriber line (DSL) clock, comprising the acts of:

upsampling (block 104 in Fig. 11) a voiceband signal, to increase said voiceband signal to a frequency comparable with a data signal; and

sample slipping one of said voiceband signal and said data signal, to synchronize said voiceband signal and said data signal (Col 10, L40-46).

e) Regarding claim 9, Long et al. disclose the act of sample slipping synchronizes said voiceband signal with said data signal (Col 10, L40-46).

f) Regarding claim 10, Long et al. disclose a method of synchronizing a public switched telephone network (PSTN) clock and a digital subscriber line (DSL) clock, comprising the acts of:

determining a phase offset (block 128 in Fig. 13) between a voiceband signal and a data signal; and

shifting one of said voiceband signal and said data signal according to said phase offset, to synchronize said voiceband signal and said data signal (Col 12, L20-25, inherent as signal shifting).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over applicant admitted prior art (AAPR) in view of Jones.

Regarding claim 1, AAPA disclose a system for synchronizing a public switched telephone network (PSTN) clock and a digital subscriber line (DSL) clock, comprising: (as shown in Fig. 1, prior art drawing)

a PSTN interface (PSTN I/F) coupled to transmit and receive voiceband samples;

a data DSL transceiver (ADSL ATU-C Transmitter and Receiver) coupled to modulate and demodulate data to and from DSL samples;

a converter circuit (DAC) coupled to convert the synchronized voiceband samples and the synchronized DSL samples between analog and digital formats.

AAPA disclose all the subject matter described above, except the specific teaching of a synchronization circuit.

Jones, in the same field of endeavor, teaches a timing recovery circuit (29 in Fig. 2), which synchronization of two communicating transceivers (Col 6, L39-41).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to employ the synchronization circuit by Jones in the voice circuit of AAPR in order to improve efficiencies of the framing rate of the voice channels in the DSL data streams.

7. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Long et al. in view of applicant admitted prior art (AAPR).

Regarding claims 6 and 7, Long et al. disclose a synchronization circuit synchronizes said voiceband samples with said DSL samples and comprises:

a phase offset detection circuit (block 128 in Fig. 13) coupled to detect a phase difference between said PSTN clock and said DSL clock;

a phase interpolation circuit coupled to adjust said voiceband samples according to the detected phase difference (block 104, 108 and 110).

Long et al. disclose all the subject matter described above, except the specific teaching of a multiplexer and a demultiplexer circuit.

AAPA, on the other hand, teaches a multiplexer and a demultiplexer circuit (as shown in Fig. 1, prior art drawing).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention was made to combine the phase detection circuit by Long et al. with the voice circuit by AAPR in order to improve signal synchronization especially in PSTN and DSL clock systems.

Allowable Subject Matter

8. Claims 4 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eva Yi Zheng whose telephone number is 703-305-8699. The examiner can normally be reached on 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-879-9306.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121
Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

March 30, 2004

Eva Yi Zheng
Examiner
Art Unit 2634



SHUWANG LIU
PRIMARY EXAMINER